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## DOGMATISM VERSUS CRITICISM[1]

THE attention of the members of this association has been directed in their recent meetings to the issue between idealism and neo-realism and within this issue especially to the problem of perception and the relation between consciousness and the object of consciousness. Personally I rejoice that the main issue is the center of our attention; but I regret exceedingly that we have turned to the problem of perception as the point where the two philosophical parties really divide, for I do not believe that the study of this problem will lead quickly and directly to mutual understanding, let alone, to any agreement. As a realist I am firmly convinced that this is not the fundamental problem at issue; I deny that it is even in general a fundamental *philosophical* problem. I am aware that the very name "realist" as a party name is thereby declared to be inappropriate and that most realists will disagree with me in what I am saying; still I can urge that party names do get chosen in a more or less accidental way and do often describe the tension or division of opinion regarding matters of momentary interest rather than the great underlying causes for this difference of opinion. Indeed the partisans themselves are often blind to the real ground of difference; and my point is, that in philosophy this is precisely the state of affairs which we should strive to avoid, because it is unphilosophical, and because it is bad methodologically. Moreover, our attention these days should be attracted not merely to a few men or to a local movement, but to a great international philosophical movement, a movement which, once it gets full headway, will mean a world-wide philosophical revolution. The realist should already know this; and the idealist, whatever his type of idealism, should awaken to the fact that the long and undisputed reign of idealism is about to enter upon troublous times. Such a movement as neo-realism has already shown

[1] A paper read before the American Philosophical Association, Cambridge, December 27, 1911. This paper borrows a few paragraphs from an essay in a forthcoming volume entitled "The New Realism."

enough symptoms to make evident that it is opposed to idealism of every form and variety from that of John Locke to the present-day pragmatism. No minor problem, but a wholly different attitude toward all philosophical problems is the true force center from which it derives its impulse.

What is this new attitude which forms the fundamental point at issue between the two philosophical parties? *It is dogmatism vs. criticism.* The neo-realistic movement is a return to dogmatism,[2] not to dogmatism in the specific sense of the seventeenth-century rationalism, but in the generic sense of the contradictory of criticism. Let me make my meaning explicit by summing up the rival theories in two sets of propositions. The defendant, criticism, maintains one or more of the following propositions: first, that in general the theory

[2] It should be distinctly understood by the reader that the word "dogmatism" is used throughout this paper in the narrow and precise sense above defined. The name is taken from Kant's "Critique of Pure Reason," where, whatever else it may mean, it denotes the contradictory of what Kant calls criticism. Unfortunately the word has other associations in Kant's mind and in the mind of the student of Kant, for it sometimes means specifically the *rationalistic* ontology of the Cartesian and Leibnizian philosophers, whereas neo-realism differs radically from this philosophy. For example, many neo-realists have a strong tendency toward an extreme empiricism and toward an abandonment of the substance-attribute notion as a fundamental notion in metaphysics. Again, the older realism was a representative realism, an epistemological dualism; whereas neo-realism is an epistemological monism. Finally, a modern dogmatism must of necessity differ from that of the earlier centuries, just because it has behind it two centuries of experience with criticism. That is, it is consciously and deliberately dogmatic, whereas the earlier dogmatism was naïve and was therefore easily misled into idealism and its so-called criticism. But in spite of these unfortunate associations, I believe the names, dogmatism and criticism, not only appropriate, but enlightening; for I think the neo-realistic movement to be a reaction against the whole enterprise of Locke, Kant, and their followers to get at a fundamental science, and not merely against their idealism. That is, neo-realism is not only a different theory of knowledge, but what is more important for metaphysics, a different doctrine as to the place of epistemology in the hierarchy of the sciences. As the names realism and idealism do not point out this difference clearly, I prefer the names dogmatism and criticism, which, if taken in their generic meanings as given by Kant, certainly indicate precisely this difference. Indeed I would go farther, for many contemporary realists are criticists, and it is at least conceivable, no matter how remarkable, that some dogmatists may be idealists. My point may be summed up briefly in the following two sentences: Dogmatism is the contradictory of criticism and defines neo-realism negatively or by exclusion. Chiefly and perhaps only in this respect is neo-realism a return to seventeenth-century philosophy.

Since reading this paper I find that most fellow realists, with whom I have had opportunity to speak regarding the name dogmatism, disapprove altogether of it, because it suggests that the neo-realist is not an empiricist. Personally, I do not fear this misunderstanding of the name, though of course any name, realism included, will be misinterpreted by the careless and thoughtless reader.

of knowledge is logically fundamental or prior to all other sciences and to all other scientific procedure; secondly, that the theory of knowledge can ascertain the limits of the field of possible knowledge; thirdly, that it can determine ultimately the validity of science and of the methods of science and can correct the results of science with the authority of a court of final resort; and, finally, that it can give us of itself certain fundamental, existential truths usually called a theory of reality. In opposition to these claims, the plaintiff, dogmatism, maintains: first, that the theory of knowledge is not logically fundamental, that it is simply one of the special sciences and logically presupposes the results of many of the other special sciences; secondly, that the theory of knowledge is not able to show, except inductively and empirically, either what knowledge is possible or how it is possible or again what are the limits of our knowledge; and, finally, that it is not able to throw any light upon the nature of the existent world or upon the fundamental postulates and generalizations of science, except in so far as the knowledge of one natural event or object enables us at times to make inferences regarding certain others; in short, that the theory of knowledge does not give us a theory of reality, but, on the contrary, assumes a theory of reality of which it is not the author. Put in one proposition, the charge which neo-realism makes against the older theory is, *idealism is a vicious circle.*

All of this can be stated in a way that is less precise, but that is probably more suggestive. There are two prominent and radically different points of departure nowadays in our philosophical studies. One man, the idealist, is impressed with the facts and truths of psychology; and though he may protest that psychology itself is but one of the special sciences, he still seeks a philosophical foundation by means of a study of these facts and truths. The other man, the realist, though not blind to these facts, can not regard them as the most significant; rather he is impressed with the truth that the chief business of science is to demonstrate, and that logic is the fundamental science. *The one man* is temperamentally a *psychologist; the other* a *logician.*

What is the immediate result? Radical disagreement in two important places: for, in the first place, how can we get a common platform upon which we can discuss the problems of epistemology and come to an agreement as to what is their correct solution; and, in the second place, how can we come to the same opinion regarding the authority and the place of the sciences in the field of philosophical research? Let us consider each of these questions more at length.

In the field of epistemology, take the problem of perception and the relation of consciousness to its object. An entirely different

point of departure tends to keep asunder the two lines of research. The idealist has on his hands a fundamental problem, and his whole theory of existence depends logically upon the solution at which he arrives. From the study of our conscious life and of the knowing process within it, he must learn all that he has a logical right to assume. He must keep his entire research, as it were, confined within the stream of consciousness. If he looks beyond consciousness he must do so from within outward. May I apply to his problem the adjective *immanent?* The realist on the other hand, as a dogmatist, approaches the problem from without. He assumes not only extensive information regarding the knowing process, the function it fulfills in life, the relation between it and the bodily organism, but also extensive information regarding the physical and social environment and regarding the nature of the objects of knowledge. Logically, the whole conception of existence as taught in physics, chemistry, and biology is at his disposal to employ as a premise. For the one party, there is no non-mental world, or, if there is, it is unknowable. For the other party, not only is there a non-mental world, but it is well-known, or at least far better known than is the mental world. Such a fundamental difference in the array of information upon which the solution of the problems is to be based can only lead to one of two things: to the illusion that we agree because we adopt the same words, though our meaning is utterly different, or to a debate on the logical position of epistemology in science. In the latter case the idealist will protest that no problem can be more nearly fundamental than the nature of the very process by which we solve problems; and the dogmatic realist will retort: Show me the critical theory of knowledge that lives up to your good intentions, that does not assume what you deny me the right to assume, that is not a vicious circle.

A similar situation meets us when we turn our attention to the different attitudes taken toward the authority of science. Thus if we ask: Who is the great metaphysical discoverer and explorer? Is he the professional philosopher or is he mankind at large and above all others the investigator in the various fields of science? Or expressed in other words, who has been giving us and who is giving us our modern theory of reality, the professional philosopher or the great mathematicians, astronomers, physicists, biologists, and psychologists; such men as Galileo, Kepler, Harvey, Newton, La Place, Lavoisier, Priestley, Dalton, Mayer, Darwin, Helmholtz, Clerk Maxwell, and Hertz? The idealist seems to answer, "The professional philosopher"; the neo-realist, "the scientific investigator and discoverer." The idealist appears to believe that the *most certain* information regarding reality, which we can possess, is that furnished by himself

and other philosophers. At best the special sciences are only relatively true or need to be translated into the language and thought of idealism. Whereas the neo-realist regards the exact sciences to-day, to be sure, not as infallible, but as by far *the most nearly certain* body of information man possesses. Now do not misunderstand these statements. The realist is aware of many a crude piece of metaphysics in this and that scientific treatise, of many metaphysical inconsistencies in the doctrines of every generation of scientists, and in those of almost every individual scientist himself. Indeed this is precisely why professional metaphysicians are needed, for the special scientist is too busy to explore thoroughly the foundations upon which his theories rest, especially during periods when science is growing rapidly. But the metaphysician is not needed to revolutionize these theories. On the contrary, his business is to think through, to make explicit, to organize, and to make evident to the world the theory of reality that the scientists are implicitly entertaining.

"Ah," the idealist will say, "this is positivism." The realist replies: "This is not positivism, for positivism is itself but a form of idealism and has in it precisely the error against which the realist protests. Its father was Hume, and, with him, it too would base science logically upon a theory of knowledge. True, there is this common feature—that the realist is inclined to oppose absolutism or any other claim to an infallible theory of reality. He sees that science grows by trial and error, that science has found no other ultimate method of procedure. The realist is in this sense an empiricist; yet, mark well, not because he bases his metaphysics upon a theory of knowledge, but because our whole scientific procedure is a tentative one. Science does not assert its results as certainties, but as probabilities. It admits that it has not full proof of any of its existential hypotheses. Thus the empiricism of neo-realism is not a theory of knowledge, but a confession that our theories are not based upon full and sufficient proof. Moreover, he denies that our theories of knowledge are any better off in this respect, for he sees no way of digging deeper down for some ultimate support for these theories than does the physicist for physics. To change the figure, he sees no immovable standpoint that can serve him as a fulcrum with the help of which his logical lever will enable him to move the world. He wishes that he could; but he is convinced that any attempt to do so, such as that of the Kantian or Hegelian transcendentalism, is an out and out vicious circle. In short his empiricism is dogmatism and differs radically from that of those idealists who are also empiricists.

Let me illustrate my point that the realist believes that we owe our metaphysics to science and not to some ultimate type of philo-

sophical research by giving two examples. Suppose a follower of Berkeley and a modern naïve realist to be disputing regarding the nature of the content of which we are immediately aware in perception. The Berkeleyan holding to an epistemological theory believes it all but self-evident that this content is mental or is made up of states of consciousness. In turn, of course, the realist maintains that this content is made up almost entirely of a non-mental world. Now my question is, why does the realist do so? Is it because he also draws this proposition as a conclusion from a theory of knowledge or perception? I reply, "No." It might even happen that he has no theory of knowledge or perception. Where does he get the proposition? My answer is, "Just where common sense and science get it"; and that means it is virtually an ultimate premise and not a conclusion at all. The realist can not come over to Berkeley's view because he can not see how to get there; for he sees no way of logically undermining the position of common sense and of science and of thereby being able to build a deeper foundation or substructure beneath science and common sense. Here then is where the two men differ. The Berkeleyan finds such an ultimate problem whose solution gives him a more nearly fundamental position than that of science. The realist beholds in this position a mere logical treadmill by which, no matter how long or how hard you labor onward, you end precisely where you started. To turn to a second illustration. Suppose a Kantian and a realistic empiricist to be discussing the nature of matter. The former would maintain that a study of the knowing process will throw light upon the question by showing what matter must be in order to be a possible experience. In short, there is a method by means of which we can in certain particulars anticipate the physics of all time to come. The realist would reply, "No, it is impossible, or at least it has never been done." In all such reasoning you Kantians are surreptitiously borrowing the fundamental postulates of the physics and of the psychology of the time; and then after you have read them into your theory of knowledge you read them out again. Twenty years ago you would probably have tried to show that mass must be a fundamental constant in all nature because of the constitution of knowledge; and your argument would no doubt have seemed plausible, because everybody then believed mass to be such a constant: but here to-day the ruthless facts are telling us that mass is a function of the velocity. In short, the realist will say, I fail utterly to see any method of research, other than that of the physical sciences, by which we can ascertain the fundamental postulates or principles of the true theory of nature. Hence I see no standpoint from which as a metaphysician I can judge regarding such matters more authoritatively than can the

physicist in his laboratory. Rather what I see is that the growth of physics and astronomy in the days of Galileo revolutionized metaphysics then, and that the growth of physics to-day is probably going to revolutionize the metaphysics of our time, too. Indeed it has ever been thus, for all the major discoveries of science have led to changes within metaphysics; and some of them, such as evolution, have led to great changes within the theory of knowledge itself.

To return to our main discussion: The dogmatist and the criticist will have a radically different methodology. If science is the source of my theory of reality my method of research must be a logical analysis of what science teaches; and if science is as yet quite unable to answer the questions I put to it, I shall simply have to wait. If, however, the theory of knowledge is the fundamental and most trustworthy source of my theory of reality, my method will be to pursue epistemological research and not to wait for the growth of any other science. Now this difference in method leads many critics to misunderstand neo-realism, charging neo-realism with an over-fondness for dialectic. But there is a radical difference between using logical analysis in order to ascertain, for example, what chemistry teaches or presupposes and using logical analysis to solve a chemical problem. No amount of mere logic could discover the weight of oxygen, but a man who never saw a chemical laboratory can learn from an encyclopedia what chemists assert to be the weight. In short, my point is that the employment of such logical analysis is a prominent trait of neo-realism and that it indicates not a return to that delightful occupation, spinning a web of truth out of one's internal organs spider fashion, but a return to dogmatism.

May I call your attention also to what seems to me further evidence that the neo-realistic movement is essentially a return to dogmatism? Why have neo-realists championed the following causes: first, the giving up of the substance-attribute notion as fundamental; secondly, the holding to logical pluralism and its companion doctrine, the defense of analysis as an ultimate method of research; and, thirdly, the complete elimination of psychology or epistemology from formal logic? Which is true; are these principles inferred by the neo-realist from his theory of knowledge or has his theory of knowledge logically nothing to do with the matter? I am convinced that the latter is true, yes, even in the case of some neo-realists who may not be fully aware of it themselves. In the case of the substance-predicate notion, history shows that there has been gradually a wider and wider elimination of this notion from the mathematical and physical sciences from the days of Galileo to our own, whereas pre-Kantian rationalism, idealism of Kantian lineage, and romanticism have held more or less tenaciously to the older conception.

In Lotze in Germany, in Bradley in England, and indeed in any upholder of the doctrine of the absolute we see a remarkable hostility to the proposition that relations are fundamental, whereas you see the opposite tendency among neo-realists. The only explanation I have of this division by parties is that psychology and sometimes romanticism dominate in the one, and logic dominates in the other. In the case of the remaining two principles, it is, however, more evident. Examine the treatises on logic of the objective idealists, the phenomenalists, and the pragmatists; and the influence of psychology, or, if you prefer so to call it, epistemology, is everywhere evident, whereas there is a remarkable tendency for neo-realism to side with formal logic against what has been dubbed *Psychologismus*. Consider finally how neo-realism champions analysis as an ultimate method of research and, in general, logical pluralism as fundamental to our modern theory of reality. Now if I mistake not it is evident to all philosophers that the exact sciences have been for centuries utterly dependent upon the method of analysis. Indeed without it we should not have any of our modern sciences. As a consequence both romanticists and monistic idealists have to find some other pigeonhole besides that of genuine truth in which to place science. In short, they have to claim that science can not be our direct and fundamental source for a theory of reality; whereas the realist claims precisely the opposite.

In conclusion, there is some evidence among realists themselves that they do not regard the name realism as the most appropriate. Mr. Bertrand Russell, who is certainly one of the foremost neo-realists in the English-speaking world, urges that the appropriate name is pluralism. I believe it would be more appropriate, for it would at least refer to a fundamental tenet of the new party; but against it I urge that the new movement is more a *methodological* rebellion against the older philosophy, and that in a recent reply to Mr. Bradley, Mr. Russell suggests this very thing.[3] Thus though I may be suggesting the impossible, I do nevertheless ask: Should not the new movement be called neo-dogmatism? This name would at once make clear to the objective idealist the difference between the parties where now he feels that he, too, is in a sense a realist. Again it would do the same for those pragmatists who call themselves realists and yet feel rightly that there is some radical difference between their position and that of the neo-realists. It would make clear the relationship between the new movement and the seventeenth-century philosophy for which this movement has already expressed a fondness and with which neo-realism has been confused by some critics.

[3] "The Basis of Realism," this JOURNAL, Vol. VIII., page 158; and *cf.* *Mind*, 1910, N. S., Vol. XIX., pages 373–378.

Finally, I believe it would indicate the chief bond between the individual realists themselves, a methodological bond rather than a theory of reality.

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## STUDIES IN THE STRUCTURE OF SYSTEMS

### 2. THE DEDUCTIVE SYSTEM FORM

OF all system forms, the so-called "deductive" has received the greatest attention. Its father is Aristotle. Following suggestions and using preliminary work by his master, Plato, he put the stamp of his own mind on his researches into the nature of the deductive system. Euclid gave the first great example of the form in his "Elements," and this example was interpreted and imitated in the light of the Aristotelian theory. Every school-boy who labored through Euclid's text was thus familiarized with the leading ideas of Aristotle's theory. And quite naturally it was believed that the deductive system form was something peculiarly mathematical, though the attempt was made, with indifferent success, to apply it to philosophy, with great success, to physics.

The conception of a deductive system thus made current may be briefly stated as follows: Its dominating idea is that of "proof," by which is meant "deductive" proof; no propositions are admitted as valid until they have been proved; and they are "true" just in so far as they have been proved. The "proof" shows that the proposition "necessarily follows" from some other propositions; but this regress, so Aristotle taught, must come to an end; this is reached when we come to the "principles" ( $\pi\rho\tilde{\omega}\tau\eta$ ) which neither can nor need be proved, for they are "self evident." By means of the proofs our propositions participate in this self-evidence which the "axioms" enjoy, and in this lucidity consists the great merit of the deductive system; error may indeed creep in through a faulty proof (nothing human is perfect, alas!); but it can be corrected, for the rules for making valid proofs were made the subject of explicit and detailed study. Propositions must be proved, that is, reduced to the axioms; concepts must be "defined," that is, reduced to the fundamental concepts, in the last resort to the categories, which thus correspond to the axioms. Categories must be clear, intelligible, general; and the "derived" concepts, by means of the definitions, participate in the clearness of the categories, just as the propositions do in the self-evidence of the axioms. The light of day thus shines through the whole building, for its very structure assures clearness, validity,

necessity, for which the philosophic mind had always been longing.

As we look back over the centuries through which the history of the deductive system took its triumphant march, we are impressed with the feeling (which to the workers at the building seems to have been a conviction) that a system, such as plane geometry, could be developed in the deductive system form *in but one way.* Certain concepts are *the* fundamental concepts, certain propositions *the* axioms, radically distinct, by their nature of "clearness," "self-evidence," from all other concepts and propositions in the system. The search for "categories" and "principles" has always taken this direction and followed this procedure: by a direct inspection they are to be recognized as such, without further ado. Of course, individual writers did err (though it seems just a trifle hard to understand how they could have failed to recognize that which is "self evident"); but the correction itself followed, with undaunted confidence, the same method of direct inspection!

This is the heritage of the Aristotelian theory; "categories," "axioms," the terms which most clearly express it.

Had philosophers not been too much absorbed in different problems and too ignorant of mathematics to be any longer interested in the work which was going on around them in the special sciences, this idea of a deductive system would have been rudely shaken by the work of intrepid mathematicians, who, without theoretical bias, proceeded to develop deductive systems of "geometry," of "algebra" by starting from *various* sets of "axioms." As it was, philosophers ignored, and mathematicians built according to Euclid's pattern, without much concern for the structural significance of their work. And so the opinion could prevail that the Aristotelian account still fitted the modern work.

These various sets of "axioms" were at first offered in the spirit of the older conception of a deductive system, as improvements on Euclid's system which was found deficient in important points. But once the absolute perfection of Euclid's system was impugned and the possibility of starting from a different basis demonstrated, the work was carried on beyond the intentions of these first attempts. Mathematicians exhibited new, and new, sets of "axioms," "hypotheses," "postulates," "primitive propositions," or whatever name they chose for their starting-point of a deductive system, and proved that all of Euclid's propositions could be deduced from their sets also. But even more important than this multiplicity of "foundations" is the fact, that, if any one of these sets of "axioms" is chosen, the "axioms" of the other sets become *theorems* which must and can be *proved.* The new set of "axioms" may simply be a new selection from among the propositions of the old systems. What

becomes of the radical distinction between "axioms" and "theorems," if they may thus be interchanged! And what is true of the "axioms" applies to the categories.

The consequences of this work have not yet been recognized, though its bearing on all our thinking seems great; for the "example of mathematics" has been potent with those who imitated, as well as with those who opposed it. Spinoza, who put his philosophy into the deductive system form, as well as Kant, who denied the possibility of "definition" and "deductive proof" in philosophy, was guided by the Aristotelian idea of a deductive system. And Kant's own attempt at establishing a "table of categories" and of "fundamental judgments" moves, at bottom, in the same direction: certain concepts *are the* categories; certain propositions *the* fundamental judgments. This is a remnant of the Aristotelian way of thinking in the great and complex German philosopher, who—though a favorite subject of attack by the young scientists working in the realm of the "philosophy of mathematics"—in other respects, and particularly in his "transcendental method," seems to have sounded the key-note of all this modern work. To have shown this convincingly is one of the great merits of Hermann Cohen.

But are we not too rash in thus speaking rather disparagingly of the Aristotelian conception of a deductive system? Has the modern work really made a different theory necessary? Above all, are the ideas controlling this work sound themselves? Wherein do they differ from the classical account, and do perhaps they themselves require modification? These questions should be put and answered systematically; for we are at present in a puzzling and somewhat irrational position. If "proofs" merely link propositions to "*postulates,*" lacking the distinguishing mark of "self-evidence," "certainty," "undeniability," what is the advantage of all this laborious "proving"? We seem to "establish" nothing! And if all the propositions of a deductive system are "contained" in the "axioms," do we not merely keep reasserting these "axioms" when we state the "Pythagorean Proposition"? The problem of the "New" in mathematics arises! Ah, says Professor Poincaré, who himself urged this problem, the "New" *exists* (and every unbiased mathematician will agree with him in this); but, though it is excluded indeed by the "deductive" procedure, it has its source in that important other method of mathematics, namely, "complete induction."

Does not the great mathematician, in opposing this "mathematical induction" to the usual "deduction," misconceive the former? This question is of double importance. If Poincaré's solution is correct, mathematics is not purely a "deductive" system, as modern mathematical logicians hold. If it is incorrect, the prob-

lem must either be solved differently or it is merely symptomatic of a general misunderstanding of the nature of a deductive system. I believe that the latter alternative is correct, and I shall indicate this by a brief analysis of Poincaré's theory.

In the first place it must appear paradoxical, if "complete induction" is really the source of the "New," that the application of the method should be so limited in "geometry" where the "New" is so very patent!

In the second place it must be borne in mind that the question how the "New" is *found* does not concern us here, but how we can account for its logical existence in a deductive system.

Now let us briefly examine this method of "mathematical induction." It may be well to attach our remarks to a particular example. I choose the "binomial theorem," because it is here that the beginner in mathematics usually makes his first acquaintance with this method; and the simple form in which it appears here illustrates the point as well as the later refinements on it by Dedekind, Schröder, Huntington, and others.

Starting with the formulæ

$$\begin{aligned} a+b &= a+b, \\ (a+b)^2 &= a^2+2ab+b^2, \\ (a+b)^3 &= a^3+3a^2b+3ab^2+b^3, \\ &\text{etc.}, \end{aligned}$$

which are obtained by succesive multiplication with $a+b=a+b$, we make an "induction" to find the formula for the $n$th power,

$$(a+b)^n = a^n + \frac{n!}{1}a^{n-1}b + \frac{n(n-1)}{1\cdot 2}a^{n-2}b^2 + \cdots.$$

How this is done in detail, it is not essential for us to examine here. But, and this is essential, this formula is not yet warranted, it is a mere presumption, a methodical guess at a general law. To incorporate this formula into the system, it requires to be "proved"; the "induction" is no warrant whatever. For in many cases we make a precisely similar induction, but find, on testing the "law" that it does not hold in general. This occurs with annoying frequency in the case of finding the "$n$th derivative of a function" (for the remainder in Taylor's theorem)! The first part of the method, the "induction" consists, therefore, merely in making, by analogy, a *guess* at a general law (Bertrand Russell uses this rather disparaging, but very characteristic, expression). It is the *second* part which establishes the law as *valid:* by assuming the formula to be correct for $n$, we prove that it holds for $n+1$. *This step from n to n+1 is the really characteristic feature of the method* (which is often called after it "conclusion from $n$ to $n+1$"); this step dis-

tinguishes it radically from any "induction." For it is a deduction pure and simple; here we "deduce"! From what? This I shall examine later. But we "deduce," no doubt about that! And nothing whatever distinguishes this "conclusion from $n$ to $n+1$" essentially from other deductive proofs. The "New" does enter here indeed; but so it does in other "deduction"; only how? This is the question which the reference to "induction" leaves completely unanswered. And the problem of the "New" remains on our hands.

Its solution, however, does not require the invention of new structural elements or the recognition of hidden and unsuspected methods: the problem is merely symptomatic of the insufficiency of our prevalent theory of a deductive system. A reexamination is needed which will draw the full theoretical consequences of the practical work of modern mathematics.

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## DISCUSSION

### MISS CALKINS'S REPLY TO THE REALIST

MISS CALKINS is almost the only "idealist" who has appeared in arms against the advancing "realistic" movement. Partly because of this, partly because of the position Miss Calkins is rightly accorded among philosophic writers, and partly because her reply to the "realist" exhibits a type of fallacy entailing very important consequences, it has seemed that her contention is particularly worthy of consideration.

The reply in question[1] is divided into two parts. The first of these is concerned with the "recent criticisms of idealism," which, it is said, can be grouped under three main heads: "first, those which oppose idealism on the ground that it is subversive of some important system of beliefs; second, those which charge idealism with fundamental inconsistency; and, third, those which claim that idealism is based on unjustifiable assumptions."

The first of these criticisms is disposed of briefly. The fact that certain beliefs are generally accepted does not render them true, and as long as one's contention is based upon this principle it is irrefutable.

The second criticism, that concerning the inconsistency of "idealism," is not treated at all fully. The "realistic" contention is said to be that the subject-object relation, which is essential to

[1] This JOURNAL, Vol. VIII., pages 449 ff.

knowledge, "is possible only on the supposition that non-mental reality exists." Miss Calkins admits that "idealism" makes the distinction between subject and object; but, apparently, not the supposition that non-mental reality exists. The "idealist," "like other men, recognizes a difference between present and external, and merely imagined, objects." But this distinction is said to refer not to two kinds of things, "extra-mental and mental," but to "objects respectively of . . . shared and of . . . unshared consciousness." The only point to be noted here is that the *nature* of an object can not be explained by the fact that it is an object for many subjects. That is a fact additional to the problem of the *nature* of the object, and irrelevant to its solution.

The third of the "realistic" criticisms of "idealism" is treated at greater length and the chief point for consideration in Miss Calkins's article is to be found in connection with it. The "realist" has said that "idealism" is based upon an unjustifiable assumption in holding that "an object, because known, is therefore mental in nature." Miss Calkins endeavors both to uphold the "idealistic" position and to refute the "realistic" criticism of it. The method employed for this purpose should be carefully observed.

The "realistic" position is first stated in the words of Holt: "The entities (objects, facts, *et cæt.*) under study in logic, mathematics, and the physical sciences are not mental in any usual or proper meaning of the word "mental." The being and nature of these entities are in no sense conditioned by their being known" (p. 452). This is said to be "an accurate and an uncompromising statement of the difference between the two parties. For the idealist does hold as fundamental just this doctrine which the realist attributes to him, that is to say, he believes that objects, as known, are mental" (p. 452). Miss Calkins asserts (p. 454) that unknown objects (and hence unknown qualities of objects) while possible, are yet "utterly negligible," and, in addition, "inconceivable" and "indefinable." Throughout the article, statements recur which seem to be based upon the position that the unknown is non-existent; but since Miss Calkins admits the possibility of the existence of an unknown, we must simply accept the statement that it is "inconceivable." Hence, the phrase "as known," at the end of the last quotation (p. 452) is unnecessary, and must not be taken to imply that Miss Calkins holds objects, as *unknown,* to be *non-mental,* nor, indeed, to be any thing at all. The contention between "idealist" and "realist" is then clear: the "idealist" holds that all objects of knowledge are mental, the "realist" that some objects of knowledge, at least, are non-mental. And the "realist" asserts that the "idealistic" contention is an unjustifiable assumption.

Miss Calkins's reply assumes the form of asserting that an examination of the objects of logic, mathematics, and the physical sciences, shows that they are "ideal" (by which, apparently, is meant the same as "mental"). An empirical study of any known object reveals the fact that it is constituted of (1) sensible qualities and (2) relations. These are treated separately; but as the argument is the same in both cases, it will simplify matters if we limit our consideration of it to the treatment of sensible qualities.

What is asserted, then, is that the "idealist *discovers* by examination of objects—he does not (as the realist accuses) *assume*—that both sense qualities and relations are mental" (p. 453). Hence, the question arises: what does Miss Calkins mean by the term "mental"?

The answer to this question is best seen from the treatment of sensible qualities. Miss Calkins does not attempt to prove the mentality of sensible qualities by the ordinary method, namely, by pointing out their "variability"; for this, she says, quite rightly, "does not prove, even though it suggests, the ideality of objects" (p. 453). "But the idealist," we are told, "rests his case, not on reasoning of this sort, but on the *results of direct observation* coupled with *the inability of any observer to make an unchallengeable assertion about sense qualities save in the terms of idealism.* To be more explicit: the idealist demands that his opponent describe any immediately perceived sense object in such wise that his description can not be disputed. The realist then describes an object as, let us say, yellow, rough, and cold. But somebody may deny the yellowness, the roughness, or the coldness; and this throws the realist back on what he directly observes, what he knows with incontrovertible and undeniable certainty, namely, that *he is at this moment having a complex experience* described by the terms yellowness, coldness, and the like (an experience which he does not give himself). This statement, and only this, nobody can challenge. And this statement embodies the result of immediate experience" (p. 453). This is the sole argument used to prove that sense qualities are mental.

Now, what is meant by saying that no one can make *"an unchallengeable assertion about sense qualities save in the terms of idealism"?* We find that "terms of idealism" are terms which ascribe to sense qualities a mental nature. That this is so follows from the statement of what the "idealist" holds "as fundamental." So that the contention is that no one can make an unchallengeable assertion about sense qualities save by saying that they are mental. When it is asked how this conclusion is supported, the illustrations supplied are found to be of the following kind. If I say, *e. g.*, that this orange is yellow, what is really implied is that I *see* that this orange is yellow; or, if I say that snow is cold, what is really implied

is that I am *aware* of it as cold; when, in general, I make an assertion of the form "*X* has the sense quality *P*," what is really implied is that I am *aware* of *X* as having the sense quality *P*. Hence, the argument runs, sense qualities are mental.

There is a certain difficulty in perceiving the logic of this argument. It must be particularly noted what Miss Calkins is demanding. She is insisting on an unchallengeable *description* of a sense quality. It is therefore important to consider what is the nature of a *description*.

The important point that comes to light when we begin to consider description is that it presupposes knowledge which is itself indescribable. Sense qualities are examples of such knowledge; for sense qualities are not merely indescribable "save in the terms of idealism," but they are strictly not describable at all. It is, *e. g.*, impossible to describe yellow to a man born blind. *Each* individual has a stock of indescribable knowledge, in which sense qualities have a large place, and it is quite incommunicable, because indescribable. Communication proceeds on the supposition that there is knowledge which, while incommunicable, is yet the property of all. Each individual is assumed to have a corresponding stock of such knowledge which he could have attained only by immediate acquaintance.

Further, all description is in the terms of the elements of which the object is composed. (We do not *describe* yellow by saying that we are *aware* of it.) It follows that there can be no description of the elements themselves. Individuals are immediately aware of them.

A description may be defined, therefore, as the characterization of a thing by the enumeration of the indescribable elements of which it is composed. The question then is: What is the nature of indescribable objects? Among such are sense qualities, and it is asserted that they are mental. But why are they mental? Is it *because* they are indescribable? If so, it should be pointed out that the proposition "Sense qualities are mental" is *different* from the proposition "Sense qualities are indescribable" and needs for its proof the mediating proposition "Indescribable qualities are mental." But how is this proposition reached?

Or is a quality mental because it is incommunicable? This conclusion does not seem to follow at once. To establish it one would have to prove independently that *all* incommunicable qualities are mental. And how is this to be done? It might possibly be contended that if an object were purely individual it would be mental, though this seems questionable; but in any case it would have to be proved that incommunicable objects were purely individual. This seems palpably false: yellow is not purely individual, though it is quite incommunicable.

What Miss Calkins has said may be summed up by saying that there are certain objects of knowledge which are incommunicable, because indescribable; though, what she actually says is that such objects can not be described "save in the terms of idealism." Hence, her contention that sense qualities are mental *should* mean simply that sense qualities are incommunicable.

It may be doubted whether Miss Calkins means nothing more than this. There is some suggestion that when Miss Calkins says that sense qualities are mental she means "mental" to refer to their *nature* and not to their incommunicability. And this leads us to suppose that the term "mental" has been used in two senses by Miss Calkins, and that the proposition "sense qualities are mental," in consequence, means one thing at one time and another at another. This seems to be borne out from the following considerations.

Miss Calkins outlines an argument (p. 452) by which a "monistic idealism" (it is apparently assumed) could be established, and also the conclusion which would be established by it. But the argument there outlined is merely mentioned; much of the article is concerned with the other argument which we have quoted. Consequently, we must believe either that Miss Calkins did not think the outlined argument adequate for her purpose, or that she considered the one she uses a more effective instrument in attaining it. Now, the conclusion which is said to follow from the "monistic idealist's" argument (the one merely outlined) is that the objects which I "directly experience . . . must be like me, must—in other words—be other-self" (p. 452). That is to say, in particular, that sense qualities must be "like me." It is true that this is said to be the conclusion of a *monistic* "idealist"; but since Miss Calkins would assume that title for herself, we must believe that it is that conclusion she is endeavoring to establish by the method which she actually employs throughout her article. *If so,* there is one important consideration.

According to the argument actually adopted by Miss Calkins the conclusion was reached that sense qualities are mental, and it was seen what that proposition *should* mean. "Mental" in this conclusion *should* mean "indescribable." And as long as a term's meaning is made clear there can be little objection to any particular usage of it. But it must be noted that this meaning of "mental" has no reference to the *nature* of the sense qualities. An object could be mental in this sense if it were "gross matter." The one condition that it would have to fulfill would be "indescribability."

Not so, however, if mental is taken to mean "like me." The term then refers to the *nature* of an object and not at all to its relations to a knower. A sense quality is "mental," is "like me," is "other-self," if it thinks, feels, wills, acts, in this sense of "mental";

and may, if it does these things, be said to be mental with as much, and as little, propriety as I may be said to be mental. And it is clear that this meaning of mental is very different from the former one.

Now, if, in using the term "mental," we at one moment adopt one of these meanings and at another moment adopt the other, our conclusion will probably be unsound. Miss Calkins seems unconsciously to have done this. She does not, indeed, explicitly use the term mental to mean "like me"; yet she says that is the "idealistic" conclusion, and the "idealistic" conclusion, she also tells us, is that objects of knowledge are mental. Hence, it seems that one sense of mental is synonymous with "like me." On the other hand, Miss Calkins does not explicitly use the term mental to mean indescribable; but that is what her argument involves. Once sense qualities are said to be mental in this latter sense, it is natural to argue, fallaciously, that they are also mental in the sense that they are "like me." But this conclusion is clearly in no way whatever connected with the arguments by which Miss Calkins endeavors to prove that sense qualities are mental.

There are two general meanings of the term mental which it is of the highest importance to keep distinct. The first of these makes the term applicable to *qualities* of *minds* as real existing entities. (In an analogous way it is said that speech is human.) In this sense of mental it is applied, *e. g.*, to awareness, and also to any other quality which is peculiar to minds.

The other general meaning of the term mental makes it applicable to any entity which is supposed to be dependent on minds for its existence, being, or reality. "Mental," in this sense, means simply "dependent for existence, being, or reality on mind or minds." It is difficult to demonstrate that there are *any* such entities, though that there are is sometimes thought to be quite obvious. It has also been thought that an "idealism" could be established if it could be proved that all objects are dependent for their existence, being, or reality on minds. But this belief has been due to a fallacy.

The fallacy consists in supposing that *if* objects are mental in the second sense, they are *also* mental in the former sense: if, that is, they are dependent for their existence, being, or reality on minds, they are *also* qualities of minds. It is hardly necessary to point out that the two meanings of mental have no logical connection whatsoever.

This confusion has led to much superficial argument on behalf of "idealism." "Mental" has been used illegitimately very widely and much *ignoratio elenchi* argument has arisen due to the fallacy arising from this two-faced term. Miss Calkins's article exhibits a similar inconsequence.

It *may* be true that the objects of knowledge are "like me." It is *possible* also that Miss Calkins can demonstrate that they are "like me." I am not at present concerned to consider possible arguments in support of this conclusion. What I am concerned to do is to show that Miss Calkins *either* seeks to establish the conclusion that objects of knowledge are mental by an illegitimate use of the ambiguous term mental *or* does actually establish the proposition that the objects of knowledge are mental, but in a sense which is trivial and wholly irrelevant to the "realistic" contention. Miss Calkins has shown that objects of knowledge are mental *neither* in the sense that they are dependent for their existence, being, or reality on minds *nor* in the sense that they are similar to minds. Yet these seem to be by far the most important meanings of the term mental, and are the meanings most relevant to the particular "idealistic" theory which Miss Calkins outlines. And I wish to point out that this inconsequent type of argument is very prevalent in "idealistic" writings.

The second part of Miss Calkins's article concerns itself (1) with the positive "realistic" doctrine and (2) with the "idealistic" conception of the universe. What is said with reference to (1), namely, that "realistic" writers have little positive doctrine is doubtless quite true. Still, is it not largely a polite fiction that a philosopher is great if he has constructed, at any cost, a pretentious theory of the universe? Has not the clearer-away of "much rubbish" a place in this world, as well as the builder of a crystal palace? In regard to (2) there is little to be said except that the treatment exhibits once more the difficulties arising from the word "mental."

The article is, on the whole, so admirably clear as to emphasize once and for all two distinct points: (1) when "idealists" say that the objects of knowledge are mental they must also say precisely what they mean by the term "mental"; (2) the hypothesis that the objects of knowledge are mental will have to find some definite, relevant, and logical support if it is to be more than a mere forgotten fantasy.

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## REVIEWS AND ABSTRACTS OF LITERATURE

*Wandlungen in der Philosophie der Gegenwart.* JULIUS GOLDSTEIN. Leipzig: Werner Klinkhardt. 1911. Pp. viii + 171.

To readers outside of Germany Dr. Goldstein's book is likely to seem significant chiefly as an evidence of the awakening of the German mind to certain new philosophical tendencies that have long been conspicuous in

Anglo-American and French thought, and as an effective instrument for the diffusion of those tendencies in the land of Kant and Hegel. The author plainly intimates to his fellow-countrymen that in philosophical matters they have for the most part ceased, at least until very recently, to be *dans le mouvement*. Elsewhere great changes have been taking place —changes in the center of philosophic interest and in the fundamental presuppositions of philosophic procedure: "and these changes, in their reactions upon religion, ethics, and men's practical attitudes, have, for now nearly two decades, been bringing about a crisis in philosophy, have been giving a new direction to inquiry." But "in German philosophy few signs of all this are recognizable. It still, with some praiseworthy exceptions, walks with unsuspecting innocence in the old paths and busies itself with the traditional problems. In many cases it has not yet emerged from the Hume *vs.* Kant controversy." Possibly the old doctrines and the traditional methods of attack may in the end hold their own and successfully dispose of the new—though the author does not, in fact, anticipate that outcome. But in any case, the new ideas must be faced, must be more than superficially understood, must be open-mindedly examined, as they but rarely have been by German academic philosophers. Dr. Goldstein has accordingly undertaken to naturalize the new tendencies in his own country and to arouse in the German philosophic public a fuller realization of the prevailing drift of contemporary reflection.

Two means are employed to this end. The author, in the first place, endeavors to show the underlying unity of seemingly diverse innovating doctrines, to trace the convergence of a number of recent lines of thought in a general conclusion of great moment and of essential novelty. He offers, in the second place, brief, but by no means mechanical, expositions of the teaching of three philosophers whom he regards as the chief representatives of the new way of thinking: Bergson, James, and Eucken. The introduction of Eucken in this sort of company is somewhat surprising; and the author in the end is obliged to admit that that metaphysician returns to the "old paths" at what is, confessedly, the crucial point. The new movement may be described (among other ways of characterizing it) as a final *Loslösung vom Platonismus;* but Eucken's "affirmation that the *Geistesleben* is in itself timeless and immutable" can only be regarded as "a not yet eliminated survival of the Platonic mode of thought." One suspects that Dr. Goldstein felt obliged to have some German representative of the new philosophy and consequently selected Eucken to figure rather incongruously in that rôle, *faute de mieux.* But in fact there are better German examples who might have been chosen, though perhaps no perfectly typical one. Some, at least, of Dr. Goldstein's "new paths" were trodden some time since by Avenarius, some by von Hartmann, and some by Dilthey; and the most important ones may be said to have been opened chiefly by Schelling and Schopenhauer.

The author's enumeration of new tendencies and his attempt to interpret their collective import are interesting and often decidedly illuminating; no one can fail to derive from the book a better understanding of the intellectual movement of our time. Yet I do not think that the inter-

pretation is at all complete or clear-cut. In general, what is now taking place, Dr. Goldstein finds, is a "smash-up of rationalism." Rationalism he defines as "a conception of the nature of science formed under the influence of mathematics and an endeavor to bring the facts of life into accord with the mathematical physicist's picture of the universe." This definition, however, hardly corresponds to the author's own meaning or to the nature of the conceptions against which the most typical new philosophies are insurgent. It is quite as much against the rationalism of absolute idealism as against the rationalism of mechanistic naturalism, that James and Bergson and their followers, and Goldstein himself, have rebelled. The formula given neither indicates the common essence nor suggests the distinguishing differences of the various current forms of anti-rationalism. And in the absence of a more satisfactory definition of rationalism, the author fails to show convincingly that all the tendencies which he describes have a significant common essence or are anti-rationalistic in the same sense. Under the one designation he includes such diverse attitudes as the simple, common-sense recognition of the limitations of our knowledge of nature and the probable necessity of future corrections in our scientific generalizations (p. 25); the admission that the subsumption of particular facts under general laws is merely description and not explanation (p. 165); the denial of the apriority and logical necessity of the axioms of mathematics (p. 68); the recognition of the futility of all ready-made philosophies of history (p. 36); the discovery that technological progress often entails such an increasing complication of human life that it becomes a doubtful boon (p. 49); the abandonment of the belief that "an absolute, *i. e.*, a final and definitive, religion" has been attained (p. 52); vitalism, which is fundamentally a special form of what may be called scientific pluralism, the denial of the possibility of regarding all natural laws "as special cases of a single, all-embracing world-law" (p. 58); instrumentalism, or the pragmatic conception of the nature and office of the intellect (p. 13); indeterminism (p. 30); temporalism, or the conception of reality as a process of becoming, in which there is no room for the timeless and eternal (p. 166); and radical evolutionism, or the conception of this becoming as a constant creation of new reality not given in nor wholly predictable from anything preexistent—in which creative process the moral endeavor of man is a participation (pp. 166–170).

All these positions, of course, represent one degree or another of diffidence with respect to the powers of the human reason; so much they have in common. But they represent very different degrees; and they have historically made their appearance, for the most part, under the influence of diverse logical motives, and as parts of quite dissimilar doctrines. The adoption of some of them by no means commits one to an acceptance of the others; and many of them are far from novel. But the adoption of the last two involves the acceptance of most—to be precise, of all but three—and naturally leads to the acceptance of all, of the others. And the fact is that Dr. Goldstein himself is a radical temporalist and a believer in Bergson's "creative evolutionism," and that to him, therefore, all these modes of anti-rationalism present themselves as phases of a single philos-

ophy. In other words, while they have not historically sprung from a common root, and while the milder and older phases of the tendency do not logically imply the newer and more extreme phases, the former *are* more or less clearly implied by the latter. The book would have been clearer and more instructive if the author had from the first made it evident that the principal root of his own anti-rationalism was the combination of temporalism and radical evolutionism—and had noted that it is only from the point of view of his own philosophy, and not in themselves, that the numerous tendencies which he mentions constitute a doctrinal unity. In the absence of an understanding of these points, the reader is likely to be left with a rather confused and congested sort of conception of both "rationalism" and its opposite, and with some errors of historical perspective not at all intended by the author. Dr. Goldstein's *Zusammenbruch des Rationalismus* is a name for too many and too various doctrines—or, at all events, for too many that are not themselves new, but merely capable of combination with certain significantly new doctrines. And since these last are scarcely set forth until the end of the book, the key to the inner logic of the author's exposition is concealed from the reader, and—one can hardly help surmising—to some extent from the author himself.

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*Some Neglected Factors in Evolution: An Essay in Constructive Biology.* HENRY M. BERNARD. Edited by MATILDA BERNARD. New York: G. P. Putnam's Sons. 1911. Pp. xvi + 489.

A book, rather interesting from the point of view of the speculative philosopher, but utterly fantastic in so far as it claims to be scientific, is Henry M. Bernard's "Some Neglected Factors in Evolution."

Mr. Bernard starts with a hypothesis of the universal presence in living organisms of a protomitomic network consisting of so-called chromatin bodies from which radiate delicate linin filaments. The chromatin bodies function chemically, their influence being distributed along the linin threads. Growth and extension of this simple chromidial network is carried on by the dividing of the chromatin, together with the splitting of the growing threads. Waste matter, resulting from chemical reactions, is carried along the filaments to the surface of the organism. The tips of the filaments are sensitive, and impulses from outside may travel inward as a nerve current.

Increase in size of an organism of this kind necessitates differentiations. Concentration of the powers of reaction and response gradually takes place. This means a closer clustering of chromidia where the stimuli are the strongest, with rearrangements of the filaments into strands for stronger and more coordinate contractions. Theoretically, such an organism should be spherical with all its chromatin collected in the center. The centers of energy would then be at the spot where all the paths of all the nerve stimuli from the surface cross each other. The primitive chromidial network thus becomes transformed into a new organ-

ism, the cell. All this reasoning is purely hypothetical, and Mr. Bernard's "Studies on the Retina," published in 1901–03, have, so far, convinced no one as to the reality of a protomitomic network.

The metazoan body, according to Mr. Bernard, consists of a multitude of chromidial centers connected with each other by myriads of filaments. Gastraeal organisms arise from a rounded protomitomic individual which became impitted to form a digestive cavity. The cavity thus produced became lined with a compact layer of nuclear nodes, forming a digestive epithelium.

How tissues and organs may be formed out of the chromatin linin network is described in Chapters IX.–XII. The scheme described denotes peculiar imagination and considerable ingenuity. It is unfortunate, however, that highly diagrammatic figures are shown purporting to be true to nature. The description of nuclear division according to the diagrams in Fig. 39 is grotesque.

Part II. deals with the "Cosmic Rhythm" which Herbert Spencer had already recognized as traceable in the phenomena of life. During long epochs species have arisen, culminated, and dwindled away. Life on this earth has not progressed uniformly, but in immense undulations. In this, Mr. Bernard catches a glimpse of an evolutionary truth "wider than any as yet apprehended." Considered in the light of this law, the evolution of organic life breaks up into a series of periods, each advancing according to a fixed formula. A great many forms are evolved on the plan of each unit of structure. Those which became modified for any special environment acquire stability at the cost of progress, but those which remain free to react efficiently to any environment at any time may yield new organisms of a type higher than their own. The production of new types of organisms is due to that special method of colony formation in which the combining organisms or "units" fuse together in such a way as to give rise to a new and more complicated organism.

Mr. Bernard traces five structural units in nature, the chromidial, the cell, the gastraeal, the annelidan, and, lastly, the unit culminating in man. In man, the nervous system is most highly specialized, the finer senses are so coordinated as to give a coherent report of the environment. A wealth of new forces appear comprised under the term psychic, *e. g.*, the thirst for knowledge, the love of the beautiful, etc. "The human unit, therefore, has to attain a condition of stable equilibrium, not only with an external, material environment, but with a psychical environment."

In the outburst of the "mind of man," in the fifth period, the psychic was "brought to the surface and externalized for the purpose of building up social aggregates." In modern society we find vast amalgamations gradually learning to live, side by side, without continual conflict. Old distinctions, necessary to the existence of the human organism only at the earlier stage of its integration, still persist. Like vestigial organs, however, they must in time disappear. Any real advance to a condition of stable equilibrium seems impossible until harmony is established between the component units of the organism. The politics of the present and the

history of the past give evidence of only blind and unsuccessful attempts to produce efficient and harmonious aggregates. Expressions of human sympathy and help have been considered graces, not duties. We are functional components of a new social organism. Only by the free development of all the units can a human society escape the fate which organisms of past periods brought upon themselves through the stiffness of their skeletons and the consequent withdrawal of large numbers of their units from sensitive contact with the environment. The organic rhythm is nearing the end of its fifth great period. Just as it appears to be repeating the law of unit formation, it vanishes entirely. May we not believe that it rises out of sight in order to start a new period on a higher level of life?

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*Free Will and Human Responsibility.* HERMAN HARRELL HORNE. New York: The Macmillan Co. 1912. Pp. xvi + 197.

If one is tempted to consider the freedom of the will an outgrown question left behind us with scholasticism and Jonathan Edwards, the publication of two books on the subject by American thinkers (Professor Palmer and Professor Horne) within three months of each other should give one a greater respect for this time-honored problem. Nor will the perusal of Professor Horne's presentation of the subject be likely to make one feel that the question is any nearer being settled than it was on that mournful day when Buridano's ass starved quietly to death in the midst of assinine dainties. That one should feel thus on concluding the book is, perhaps, the more surprising inasmuch as the author does not pose as a dispassionate judge, but frankly holds a brief for the cause of freedom. To say this, however, does not mean that he treats determinism in an unfair manner. He states the case without prejudice and puts the arguments on both sides as strongly as he can.

The plan of the book is simple. After an introductory chapter, the history of the dispute is traced from the earliest times to the present. Then comes a presentation of the arguments of determinism, followed by the libertarian's rebuttal, and these are then reinforced by a chapter of positive arguments in favor of freedom. With this the discussion really ends, though further chapters are given us on "Pragmatism and Freedom" and "The Difference it Makes."

The historical sketch of so large an issue is naturally superficial. This of course was inevitable and is quite excusable. But the author might have given a clearer notion than he does of the relative importance of the question in pagan and in Christian philosophy. Moreover, the attempt is made to put the history of the conflict in such a light as to be itself an argument in favor of freedom, by showing that the general tendency has been toward it and away from determinism,—a conclusion arrived at by omitting any mention of the great reinforcement which determinism has received from the modern views of nature since the time of Galileo.

Professor Horne claims no originality in his statement of the arguments on either side. He has simply collected all he could find, and the result is nine arguments for determinism (each separately rebutted), and twelve arguments for freedom. In reading these thirty arguments (counting the rebuttals) one can not help feeling that each side would have been more persuasive had it been furnished with fewer reasons. More striking is the author's apparent failure to grasp the real force of the ethical argument of determinism so well put by Hume, Greene, and many others, that if the act is not determined by the character, responsibility and, with it, morality go to pieces. This seeming failure of our author to evaluate fully the strongest argument of his opponents is perhaps related to his frequent confusion of determinism with materialism, of the doctrine of freedom with idealism. That Professor Horne is perfectly aware of the distinction here involved is clearly shown by the appendix; and yet many of his most elaborate and most trusted arguments and rebuttals aim simply at proving that mind may be a cause, that will acts are not determined by brain states, etc.—as if Hegel, Greene, Paulsen, and a band of others had not amply demonstrated that determinism is as consistent with mental causation as is freedom.

The value of the book lies in the sharpness with which the issue is stated, the clearness with which the whole great subject is presented in 187 pages, and the excellence of the rebuttals of certain strong deterministic arguments. There is appended also a valuable bibliography which every one interested in the subject will be glad to have. On the whole, the book fulfills the purpose for which it was written as expressed in the author's preface: "In my own work I have felt the need of a clear brief treatise covering both sides of the issue in outline, to which students might be referred, and which might, perhaps, be used as a text for discussion at a certain point in the course. These pages are designed to supply such a need."

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## JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. January, 1912. *Le "volontarisme intellectualiste"* (pp. 1–21): A. LALANDE. – Critical discussion of Fouillé's "Thought and the New Anti-intellectualistic Schools." *Les grands courants de l'esthétique allemande contemporaine* (1er article) (pp. 22–43): V. BASCH. – Shows the fundamentally psychological method of all German estheticians and discusses the Einfühlung theory of Lipps and Volkelt. *Les conséquences et les applications de la psychologie* (pp. 44–67): R. MEUNIER. – A sketch of the working value of psychological science in logic, ethics, sociology, metaphysics, pedagogy, psychotherapeutics, and "the difficult art of living." *Notes de discussions. Y a-t-il dualisme radical de la vie et de la pensée?:* A. FOUILLÉ. *Analyses et comptes rendus.* F. Le Dantec, *Le chaos et l'harmonie universelle:* CH.

PIEDALLU. Laberthonnière, *Positivisme et Catholicisme:* J. BARUZI. Alexandra David, *Le modernisme bouddhiste et le bouddisme du Bouddha:* J. BARUZI. J. Pacheu, *Psychologie des mystiques chrétiens:* J. BARUZI. A. Brofferio, *La Filosofia delle Upanishadas:* J. BARUZI. L. Jeudon, *La morale de l'honneur:* F. PAULHAN. J. Segond, *Cournot et la psychologie vitaliste:* DR. CH. BLONDEL. L. Perego, *L'idealismo etico di Fichte e il socialismo contemporeano:* J. SEGOND. B. Croce, *La Filosofia di Giambattista Vico:* DR. S. JANKÉLEVITCH. Kant, *Gesammelte Schriften:* J. SEGOND. *Revue des périodiques étrangers.*

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## NOTES AND NEWS

SEVERAL professors and graduates of the new National University of Ireland, founded in 1909 (see *Rev. Sc. Ph. Th.*, III., p. 390), published in March the first number of a review, entitled *Studies,* in which they intend to place before the reading public their researches in general literature, celtic, classic, and oriental literature and history, philosophy, pedagogy, sociology, and the sciences. The magazine is to be directed by a committee presided over by the Reverend T. A. Finlay, S.J., M.A., professor of political economy in the University College of Dublin. Each number will contain articles, reviews, and notes.

PROFESSOR WILLIAM JAMES'S letters are being collected for biographical purposes, and any one who has any of his letters can render assistance that will be highly appreciated by addressing Henry James, Jr., 95 Irving St., Cambridge, Mass. Casual or brief letters may have an interest or importance not apparent to the person preserving them; and news of the whereabouts of any of the late William James's letters will be gratefully received.

A RECENT number of the *Cambridge Review* notes the lively interest of university scholars in the study of early Greek religion. Recently we had Miss Harrison's remarkable "Themis," and in the near future we may expect Mr. F. M. Cornford's "From Religion to Philosophy," as well as a book by Mr. A. B. Cook and further researches from the original and always stimulating pen of Professor Ridgeway.

M. W. SPECHT, privat-docent of psychiatry in the University of Munich, recently launched a *Zeitschrift für Pathopsychologie* (Leipzig, Englemann), the aim of which will be to strengthen the psychological foundations of mental pathology. Professors Ach, Bergson, Heymans, Janet, Külpe, Meumann, Münsterberg, Dick, and Sommer will be contributing editors.

A NEW periodical, *Imago,* is announced from Vienna, edited by Professor S. Freud and published under the direction of Otto Rank and Dr. Hanns Sachs. It is to be devoted to the application of psychoanalysis to the entire field of mental sciences.

THE University of California has conferred the doctorate of laws upon Dr. Sidney E. Mezes, professor of philosophy and president of the University of Texas, and upon Dr. E. C. Sanford, professor of psychology and president of Clark College.

AT the National University of Mexico Professor J. M. Baldwin is delivering the second half of the two years' programme of lectures on psychosociology. In addition to these lectures a course in the history of psychology is also announced.

MRS. JOHN STEWART KENNEDY has given to New York University a Hall of Philosophy. It is to be known as the Cornelius Baker Hall of Philosophy in memory of Mrs. Kennedy's father, who was one of the founders of the University.

PROFESSOR LILLIEN J. MARTIN, of the department of psychology of Stanford University, gave an address on "Uber die Localisation optischer Vortellungsbilder" at the Fifth Congress for Experimental Psychology, held in Berlin.

DR. F. W. MOTT will complete his series of lectures on "Heredity considered from the Point of View of Physiology and Pathology" at Kings College, University of London, on June 10.

IN a recent issue of the JOURNAL, the American Philosophical Society was incorrectly referred to as the Philadelphia Branch of the American Philosophical Association.

MM. L. DUGAS and M. L. Cellerier, of Geneva, are about to launch a new educational annual entitled *Année Pédagogique,* which is to be published by Alcan, Paris.

THE installation of Dr. John Grier Hibben, hitherto Stuart professor of logic, as president of Princeton University occurred on Saturday, May 11.

DR. IRA REMSEN has resigned the presidency of Johns Hopkins University. It is understood, however, that he will retain the chair of chemistry.

MESSRS. E. P. DUTTON AND COMPANY announce the publication of "English Philosophies and Schools of Philosophy" by Professor James Seth.

DR. ALEXANDER MEIKLEJOHN, professor of philosophy and dean of the faculty of Brown University, has been elected president of Amherst College.

MR. WALTER B. PITKIN, associate in philosophy in Columbia University, has been appointed associate professor of philosophy.

MR. C. M. GILLESPIE, of Yorkshire College, has been appointed to a newly established professorship of philosophy at Leads.

MR. A. J. BALFOUR has been appointed as next Gifford lecturer for the session 1913–14. The appointment is for two years.

ON May 14 Professor W. Bateson gave the first of two lectures on "The Study of Genetics," at the Royal Institution.

PRIVAT DOCENT DR. F. A. SCHMID, of the University of Heidelberg, has been made professor extraordinarius.

DR. GEORGE CLARKE COX, of Dartmouth College, has been appointed assistant professor of philosophy.

THE ninth annual meeting of the Experimental Psychologists was held at Worcester, Mass., April 15–17.